BCLDP CEMP

The Battelle Columbus Laboratories Decommissioning Project | Columbus Environmental Management Project

Transuranic Waste Modeling

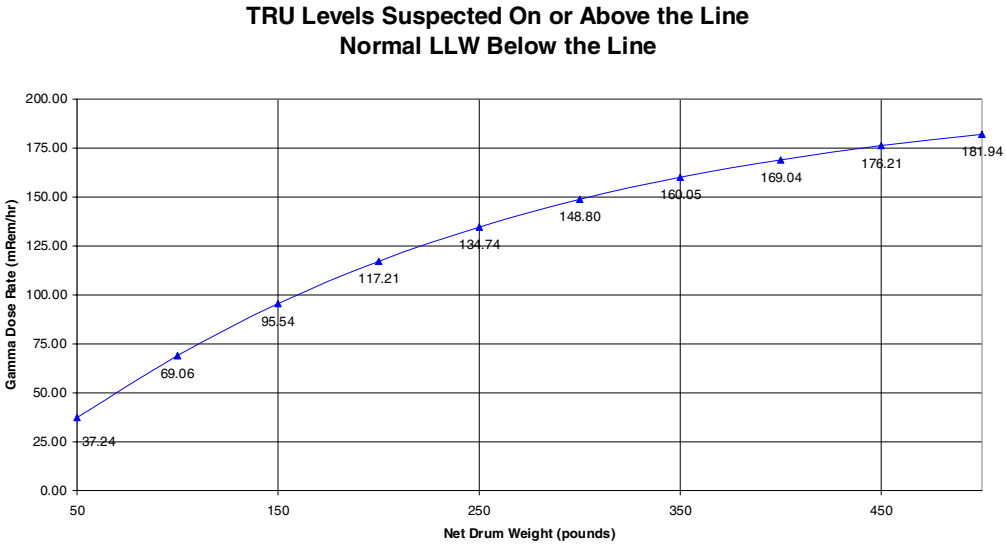
Savings = $3 million

Problem/Need

As radioactively contaminated waste is accumulated during decontamination and decommissioning of a Battelle site near West Jefferson, Ohio, its waste classification (e.g., transuranic, low-level) must be established. Disposal site regulations require that the waste be directly sampled or appropriately modeled.

Technology Description

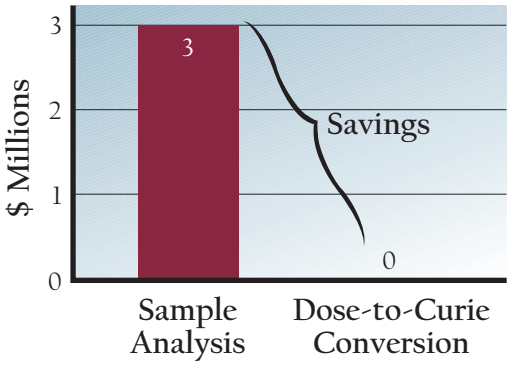
The Battelle Columbus Laboratories Decommissioning Project (BCLDP) is using a sample-based process (dose-to-curie conversion) to model the radioactive waste accumulated at the West Jefferson site. Based on a standard profile of waste, the quantity of gamma-emitting low-level waste (LLW) is directly related to the quantity of transuranic (TRU) waste. A dose-to-curie conversion chart developed by Battelle plots the individual package weight on the x-axis and gamma dose measured in the field on the y-axis. The chart indicates readings above which waste material is suspected of being TRU and below which it is LLW. The validity of the model has been confirmed by waste assays.



Benefits

The dose-to-curie conversion chart converts measured gamma doses to curies. The chart makes it possible to identify TRU waste items in the field and expedites sorting and segregating TRU waste from low-level waste. Because waste does not have to be directly sampled, BCLDP will save over $3 million using this modeling system.

Dose-to-Curie Chart



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